Section 3

PERIODONTAL DISEASES

Periodontal diseases are infections caused by bacteria in the biofilm or dental plaque that forms on oral surfaces (US DHHS, 2000b). Gingivitis is an inflammation of the gingiva characterized by a change in color from normal pink to red, with swelling, bleeding, and often sensitivity and tenderness (US DHHS, 2000b). Gingivitis is usually reversible with good oral hygiene, such as regular tooth brushing and the use of dental floss.

In contrast, destructive periodontal diseases result in loss of the bone and other tissues that support the teeth (loss of attachment) and can ultimately lead to loss of teeth. Oral colonization by several types of bacteria is associated with severe forms of the disease. Its etiology is still unclear, but it appears to result from a combination of infection by these bacteria and a pattern of host responses that leads to loss of attachment.

Although some periodontal disease is usually associated with aging, severe destructive disease is only found in a small percentage of the population and susceptibility may have a genetic basis. Other known risk factors for destructive periodontal disease include tobacco use, which appears to be the most important environmental risk factor, gender, and diabetes mellitus, especially when accompanied by poor metabolic control (Genco, 1996).

There are numerous methods to measure and classify periodontal diseases including those published by the American Academy of Periodontology (AAP, 2001; Armitage, 1999) and those used in Healthy People 2010 (US DHHS, 2000a). This section examines gingivitis and destructive periodontal disease defined as attachment loss of at least 4 mm at one or more sites.

REFERENCES

American Academy of Periodontology (AAP). What are periodontal diseases? Chicago, IL: the Academy. Retrieved October 4, 2001. <http:/www.perio.org/consumer/2a.html>.

Armitage GC. Development of a classification system for periodontal diseases and conditions. Ann Periodontol 1999;4:1-6.

Genco RJ. Current view of risk factors for periodontal diseases. J Periodontol 1996;67(10 Suppl):1041-9.

U.S. Department of Health and Human Services. *Healthy People 2010: Understanding and Improving Health.* 2nd ed. Washington, DC: U.S. Government Printing Office, November 2000a.

U.S. Department of Health and Human Services. *Oral Health in America: A Report of the Surgeon General.* Rockville, MD: U.S. Department of Health and Human Services, National Institute of Dental and Craniofacial Research, National Institutes of Health, 2000b.

3.1 Percentage of adults with gingivitis

The prevalence of gingivitis varies by race/ethnicity and gender. Albandar et al. (1999) reported that gingivitis is more prevalent in Mexican Americans and non-Hispanic blacks than in non-Hispanic whites and more prevalent in males than in females in the U.S. population. In this study 50.3% of the U.S. population aged 30 years or older had gingivitis.

SOURCE OF DATA

The analyses reported here are based on the Third National Health and Nutrition Examination Survey (NHANES III) 1988-1994, National Center for Health Statistics, Centers for Disease Control and Prevention. Individuals 20 years or older with bleeding on probing at one or more sites were classified as having gingivitis.

- Among the U.S. population aged 20 years and older, 52.9% had gingivitis.

- **Differences by race/ethnicity (Figure 3.1.1)**
  - A greater percentage of Mexican Americans than non-Hispanic whites had gingivitis.

- **Differences by federal poverty level (Figure 3.1.1)**
  - A greater percentage of persons living below the federal poverty level than persons living at or above the federal poverty level had gingivitis.

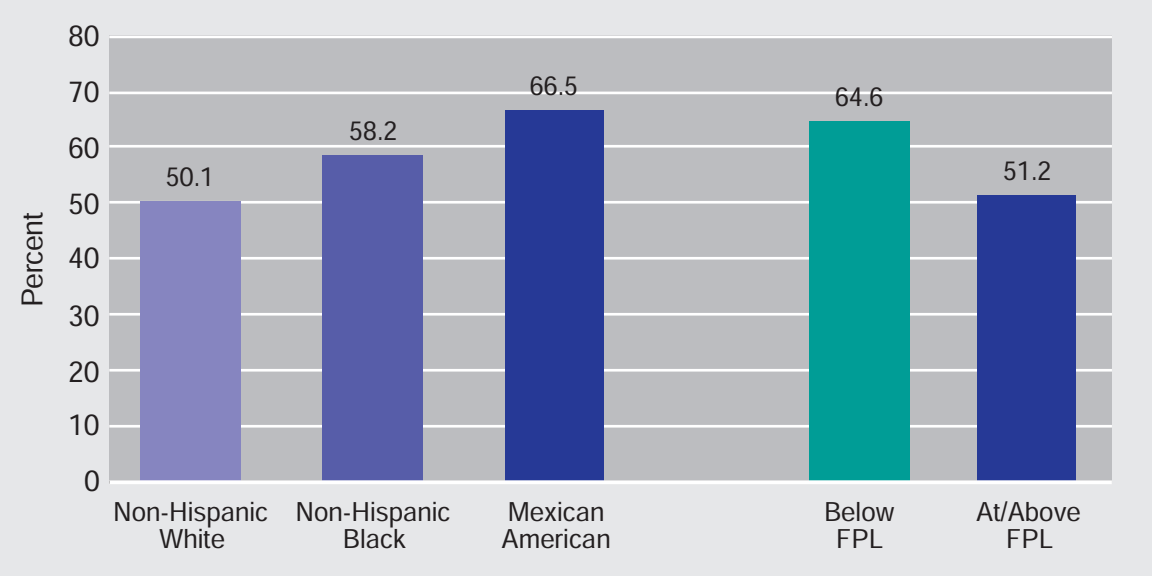
- **Differences by education**
  - A greater percentage of persons with less than a 12th grade education than persons with more than a 12th grade education had gingivitis.

Bullets reference data that can be found in Table 3.1.1.

REFERENCE

Albandar JM, Kingman A. Gingival recession, gingival bleeding, and dental calculus in adults 30 years of age and older in the United States, 1988-1994. J Periodontol 1999;70:30-43.

Figure 3.1.1. Prevalence of gingival bleeding among adults aged 20 and older by selected demographic characteristics



Data source: The Third National Health and Nutrition Examination Survey (NHANES III) 1988-1994, National Center for Health Statistics, Centers for Disease Control and Prevention.

3.2 Percentage of adults with destructive periodontal disease

There is no universally agreed upon definition of periodontitis or of disease severity. In this report we will use the Healthy People 2010 definition of destructive periodontal disease (DP) as the presence of one or more sites with 4 mm or greater loss of tooth attachment compared to surrounding periodontal tissues (US DHHS, 2000). Twenty-six percent of the U.S. population aged 20 years and older had destructive periodontitis. In contrast, 5.6% of the U.S. population aged 20 years and older had severe destructive periodontitis, as measured by a mean loss of attachment of at least 5 mm (NHANES III, unpublished data).

Good oral hygiene, such as daily tooth brushing and flossing and periodic cleaning by a dentist or hygienist, can reduce the amount of bacterial plaque on tooth and gingival surfaces and help maintain periodontal health.

SOURCE OF DATA

The analyses reported here are based on the Third National Health and Nutrition Examination Survey (NHANES III) 1988-1994, National Center for Health Statistics, Centers for Disease Control and Prevention.

Periodontal diseases (as measured by loss of attachment of at least 4 mm at one or more sites)

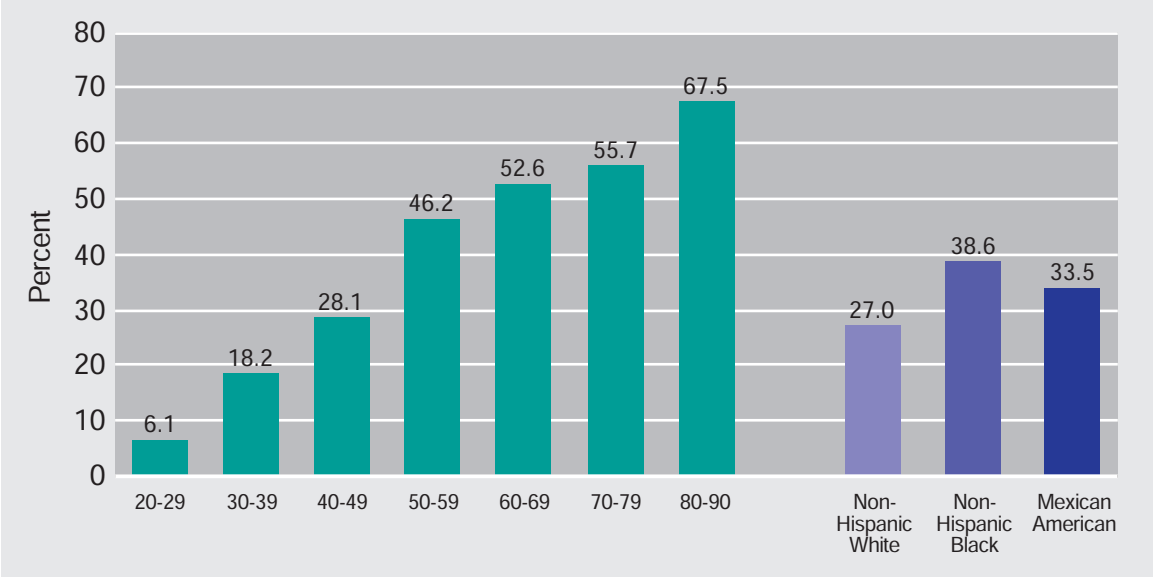
- **Differences by age (Figure 3.2.1)**
  - The percentage of persons with DP was higher among older age groups.
- **Differences by race/ethnicity (Figure 3.2.1)**
  - A greater percentage of non-Hispanic blacks compared to non-Hispanic whites and Mexican Americans had DP.
- **Differences by federal poverty level (Figure 3.2.2)**
  - The percentage of persons with DP was greater among persons living below the federal poverty level compared to persons living at or above the federal poverty level.
- **Differences by education (Figure 3.2.2)**
  - The percentage of persons with DP was lower at higher levels of education.
- **Differences by smoking status (Figure 3.2.2)**
  - A higher percentage of persons who smoked at least 100 cigarettes during their lifetime had DP compared to those who have not.

Bullets reference data that can be found in Table 3.2.1.

REFERENCE

U.S. Department of Health and Human Services. *Healthy People 2010*. Conference ed. With Understanding and Improving Health and Objectives for Improving Health. 2 vols. Washington, DC: U.S. Government Printing Office, 2000.

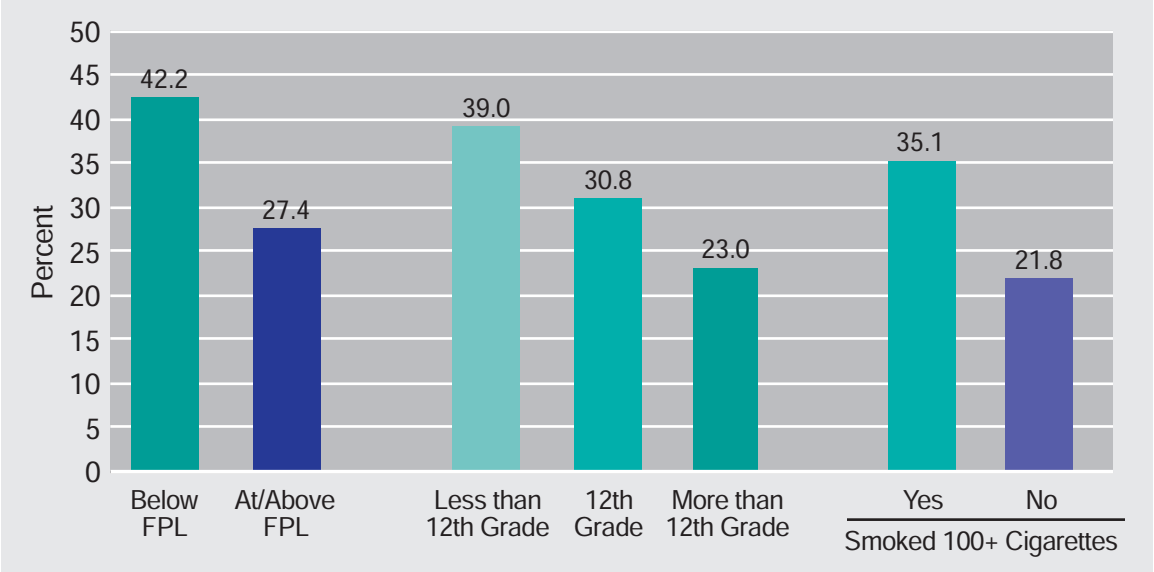
Figure 3.2.1. Prevalence of loss of attachment of 4 mm or more among adults aged 20 and older by age and race/ethnicity*



* Age standardized to the year 2000 U.S. population (race/ethnicity only).

Data source: The Third National Health and Nutrition Examination Survey (NHANES III) 1988-1994, National Center for Health Statistics, Centers for Disease Control and Prevention.

Figure 3.2.2. Prevalence of loss of attachment of 4 mm or more among adults aged 20 and older by selected characteristics*



* Age standardized to the year 2000 U.S. population.

Data source: The Third National Health and Nutrition Examination Survey (NHANES III) 1988-1994, National Center for Health Statistics, Centers for Disease Control and Prevention.